

5

Of Berry Patches

WHAT MAKES A KIND OF PLACE?

The array of place kinds or ecotopes, habitats, or vegetation communities recognized by a culture as having special value or utility in a specific landscape cannot be assumed, but must be established through empirical investigation. Nor can their correlation with the habitats or environmental features recognized by Western sciences be neatly predicted. It stands to reason that peoples with differing ways of life and relationships to the landscape of their homeland may recognize and name the features of their landscape in distinctive ways. In the previous two chapters, I discuss the array of landscape terms used by the Gitksan and Witsuwit'en. Here I want to focus on a particular ecotope that is widely shared among British Columbia First Peoples, from the vantage of Gitksan ethnoecology and that of their close neighbours, the Witsuwit'en—the berry patch. In northwest British Columbia, the berry patch is a highly salient and significant ecotope. Most often a berry patch is a recognized and productive, perhaps named, site where large amounts of black huckleberry (*Vaccinium membranaceum*) can be harvested.

The historic importance of berries as a carbohydrate source, storage and trade item, and valued good to be consumed at feasts (potlatches) calls attention to this distinctive cultural ecotope and the question of how berry patches

are recognized, created, and maintained. Given the widespread dominance of forest, especially dense coniferous forests, shrub-dominated ecosystems are not normally persistent but require burning to retard forest succession (N. Turner 1999; Johnson 1999; other studies in Boyd 1999). Black huckleberry is culturally the most salient berry in the region, a status underscored by its Gitksan name *sim maa'y*, which means 'real or true berry', and black huckleberry patches were formerly important foci of the seasonal round, and important owned properties of corporate House or Clan groups for the Gitksan and Witsuwit'en (Trusler and Johnson 2008; Johnson 1998, 1999; Daly 2005). Several other berry species were harvested and consumed in relatively large quantities, though I have learned less about their ethnoecology, harvest and management. The two most significant of these are saskatoons (*Amelanchier alnifolia*) and lowbush blueberries (*Vaccinium caespitosum*).

Although significant edible plant species may be widely distributed within a region, the highly productive sites necessary for effective harvesting are not uniformly distributed across the landscape. Instead, these sites tend to be patchy (cf. Hawkes et al. 1982; Turner et al. 1992; Johnson 1999). As Nancy Turner and Douglas Deur and others have demonstrated in British Columbia (Deur and Turner 2005; Turner 1999; Johnson 1999; Darby 2005; Thornton 1999) important plant resources such as berry patches and root gardens are frequently managed to enhance productivity. It appears that for the highly prized and productive black huckleberry, indigenous people actively managed it throughout its extensive range (Trusler 2002; Mack 2001; Mack and McClure 2002; Turner 1999), making it an important and at least partially anthropogenic ecotope. But how do people decide what are appropriate sites to manage for berries? Are there biophysical parameters that are recognized by local groups such as the Gitksan and Witsuwit'en? What characteristics must a site have to be an actual or potential berry patch? (For the actual case, large numbers of fruit-bearing bushes are an obvious clue; a potential or former berry patch is much more elusive to locate.)

An understanding of berry patches in northwest British Columbia must begin with a sense of the cultural importance of berry patches, and of the landscape context in which they occur.

The historic and cultural importance of berries

Berries, and particularly black huckleberries, were the most important carbohydrate food in northwestern British Columbia before the introduction of rice, flour, and potatoes by Europeans. Aside from berries and other fruits,

only tree cambiums, fern rhizomes, and rice-root lily bulbs were available sources of carbohydrate that could be harvested in some quantity, and that could provide some carbohydrate in the winter diet to complement the protein from dried fish and what could be obtained in the hunt (Gottesfeld 1995; Johnson 1997). Black huckleberries are extremely productive on good sites.¹ They are relatively high in carbohydrates and provide vitamin C and other vitamins (Kuhnlein and Turner 1991; Gottesfeld 1995). Few other significant sources of carbohydrate were available which could be gathered in quantity and stored for the winter. Huckleberries were harvested and preserved in large quantities by both Gitksan and Witsuwit'en, historically from large high-elevation berry camps accessed by well-constructed trails, as well as more opportunistically. Before the introduction of canning and freezing, huckleberries were processed by cooking and drying into large berry cakes, in which form they could be stored for the winter or traded, and which were much lighter to transport than the fresh berries. This process is described in *Gathering What the Great Nature Provided* (People of Ksan 1980) and in Johnson 1997. Other berries were sometimes dried separately like raisins (saskatoons), preserved in boxes or bladders with grease (lowbush blueberries and cranberries), or added to the berry cakes (Gottesfeld 1991; Johnson 1997; People of Ksan 1980; Smith 1997). Berries were and are an important gift for distribution during potlatches, and black huckleberries retain a symbolic role in the Witsuwit'en potlatch, where distribution of them is still accompanied by singing of berry songs by the recipient chiefs. In contemporary understanding, giving large quantities of berries is a demonstration of generosity on the part of the ascending chief, and demonstrates the cohesiveness of the social group and its link to the land. Dried berry cakes also were highly prized by coastal peoples and were one of the most important trade goods which the Gitksan and Witsuwit'en transported over the Grease Trails to the coast to trade for oolachan grease and other coastal delicacies such as dried seaweed and herring eggs (People of Ksan 1980).

As I described in the previous chapters, for the Gitksan and the Witsuwit'en of the Bulkley Valley, the landscape is divided into territories and smaller resource properties such as fishing sites, which are owned by corporate groups. Allocation of resources is mediated by hereditary chiefs, and access to resources follows kinship and marriage ties. For the Gitksan, the House (*Wilp*) is the most important territorial level, while for the Witsuwit'en the Clan is also significant. Figure 5.1 provides an overview of the location of traditional berry sites in relation to the main twentieth-century Gitksan and Witsuwit'en villages.²

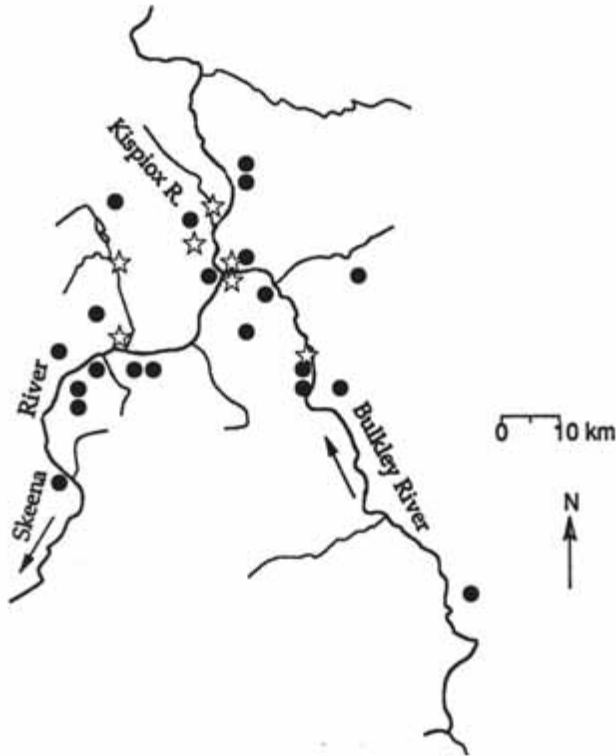


Figure 5.1 Location of traditional berry sites in relation to the main twentieth century Gitksan and Witsuwit'en villages. Berry patches are represented by filled circles, and village locations by stars.

Management of berry patches

The importance of black huckleberries in the traditional economy and the high value placed on the fruit meant that berry patches were an extremely important kind of place or ecotope, and were important properties of House/Clan groups. In the absence of management for early successional stages by periodic burning, huckleberry patches become unproductive over time (Johnson 1999; Turner 1999; Trusler 2002).

Burning was undertaken in the spring or in early fall, when the huckleberry patches could be safely burned without starting a conflagration (Johnson 1999). Timing of burning varies between sites and with species,

and would be integrated into the seasonal round of the local people. Black huckleberry sites, particularly those at higher elevation, were often burned in the fall, while lowbush blueberry sites and low-elevation huckleberry sites would be burned in spring, or just before a rain.

A burn that was too hot would destroy the duff layer and the huckleberry rhizomes, while too mild a burn would not remove competing vegetation nor effectively stimulate vigorous new stem growth. Roles and responsibilities associated with huckleberry management were aspects of territory management shaped by the reciprocity between different clans, especially those of husbands and wives. Berry patch burns were suppressed by the BC Forest Service in the 1930s and 1940s, and have not been successfully reintroduced in the region, despite interest by both First Nations and the Forest Service (Johnson 1999).

Scott Trusler (Trusler 2002; Trusler and Johnson 2008) attempted to estimate the quantity of black huckleberries required before alteration of the local traditional economy by colonists and traders. Based on historical population estimates (from Ray 1985 and Mills 1994, in Trusler 2002:53) and estimates of historic consumption figures per capita (discussed in Trusler 2002:52), Trusler believes that total combined harvests for the Gitksan and Wet'suwet'en were in excess of 400,000 US gallons (approximately 1.6 million litres) per year, including berries harvested for domestic consumption, feasts, and trade. His estimate is based on a number of assumptions regarding the extrapolation of population figures from archival sources discussed by Ray (1985) and Mills (1994), as well as a series of assumptions, also based on historical figures, about the observed magnitude of berry harvests in the nineteenth and early twentieth centuries. Trusler stresses that the values arrived at must therefore be regarded as indicative of the magnitude of aboriginal harvest, but cannot be considered definitive.³ Average black huckleberry yield figures based on research by Don Minore of the US Forest Service were 827 L/hectare; thus a harvest of the inferred magnitude would have required nearly 2,000 hectares of productive huckleberry area per year for the Gitksan and Witsuwit'en (Trusler 2002).

The need for large quantities of huckleberries for the feasthall provided an important impetus for management of the berry resource in the past. The current lack of huckleberry management has made it difficult for First Nations to access sufficient quantities of berries for customary purposes and poses a challenge to the traditional use of huckleberries for ceremonial purposes in the feasthall. Furthermore, the lack of management at the House

territory level creates an additional barrier to cultural use of this species when House groups are not able to locate harvestable quantities of berries within their House territories and must seek access to berries on the territories of other House groups.

The ecology of berry patches

Black huckleberries are a medium height shrub that forms patches, spreading by underground rhizomes. They tolerate a wide range of environments in northwest British Columbia, but thrive in sunny sites with somewhat acidic soil. Though they are long-lived, they are not tall, and are easily overtopped by willows, aspens, young coniferous trees and the like. Once overtopped, they persist for very long times, but are stunted, spindly, and fruit sparsely or not at all. The experience of someone who walks or hikes extensively in northwest British Columbia will reveal that productive berry patches are not widely and evenly dispersed across the landscape. In contemporary northwest British Columbia, productive and accessible berry patches are often found in timber cuts, which are of course managed to replace growing coniferous trees as quickly as possible, resulting in shifting and ephemeral berry resources. Huckleberries can be found throughout the Interior Cedar-Hemlock Biogeoclimatic Zone from elevations near the valley bottoms to near timberline. The British Columbia Ministry of Forests funded some research into berry productivity and autecology in an effort to better understand which sites might be best suited to huckleberries (Burton 1998; Wintergreen Consultants 2001a, 2001b). Scott Trusler and I both sought to explore Gitksan and Witsuwit'en understanding of the ecology of berry patches, reasoning that the peoples who had harvested and depended upon black huckleberry and other culturally important fruit species might have a depth and subtlety of knowledge unlikely to be arrived at by relative newcomers through a few limited studies.

Ethnoecology of berry patches

While doing research on Gitksan and Witsuwit'en ethnobotany, I recorded information about aboriginal burning, and on the harvest and processing of berries (Johnson 1997, 1999). During that research, a number of specific berry patches were mentioned, several specific berry patch locations were referred to by name, and narratives of berry patch burns and late summer traditional berry camps were shared. When I returned to the region in the late 1990s to focus on landscape ethnoecology, I asked again about berry

patch locations and names to elucidate local understanding of a key cultural ecotope. At about the same time, Scott Trusler was doing field research on Gitksan and Witsuwit'en berry ecology and was working closely with the Office of the Witsuwit'en, the local Witsuwit'en hereditary chiefs' office. Trusler's approach was complementary to mine, and involved a series of visits to known historic berry patches to characterize their ecology, and look for evidence of cultural features and past management. (See Trusler 2002 for a full exposition of Trusler's methods and findings.)

Berry patches I first heard about were on the slopes of the mountains, from mid-slope to near timberline. Older Gitksan men and women recalled travelling to berry patches along well-kept trails, accompanying older family members to well-known places on dedicated berry picking trips. There are words in Gitksanimax/Gitksenimkx for "berry camp" and "berry trail" (see Table 3.1). Elders recalled prolonged trips to high-elevation berry camps in the company of a large group of people, as in the late Olive Ryan's (Gwaans) account of her Grandmother Sigidimnak Ha'naamuux (Fanny Johnson) leading the people of Andimaul across the new railroad bridge at Skeena Crossing and up to her berry patch *Kslawt* in the early years of the twentieth century when Olive was a girl. People camped in the subalpine berry patch for a couple of weeks, picking and caching their berries before cooking them down to jam in large cedar bentwood boxes, and then drying them on berry racks (*skeexsin*) to make the large rolled berry cakes. This berry patch is on the mountain massif now called Rocher de Boule just behind South Hazelton. When Olive was a grown woman, she used to ascend the mountains across the Skeena River from the village of Gitwingax to pick berries. By this time berries were preserved by canning, and large parties no longer spent a week or two in a single berry camp, but went on short one- or two-night trips, carrying down the fresh berries to be processed in the village. There were still maintained trails to these patches, which also had names (see below).

Two other elders, the parents of the present Sim'oogit Dinim Gyet of Gitwingak also told me about berry patches on the mountain across from where I lived. Art Mathews Senior (Sim'oogit Tsii Wa) and his wife Kathleen recalled how the berry patches had been burned in the fall when the men were ascending to the alpine zone to hunt mountain goats, and explained to me how that service was related to the House structure and reciprocity. (See Johnson 1997 and 1999 for more detail.) Art had himself participated in a berry patch burn on this mountain when he was a young man. When I returned to this research in the mid 1990s, Art Jr., Dinim Gyet talked to me

about the locations of the named berry patches on his territory, the trail net, and the relationship of these sites to other properties of the House territory, including the goat hunting camp, the groundhog (marmot) hunting area, places to gather medicines, the summer fish camp, and the boundary with the adjacent Frog (*Ganeda*) territory. These sites were also all mid- to high-elevation sites.

Visiting in Moricetown and speaking with the late Pat Namox (Wah'tah'kwets) and his wife Lucy (Goohlat) talked to me about huckleberry patches, at lower elevation on the low rolling hills behind Moricetown, and on the timing of burning, also in fall but carefully timed to be just before a rain. Pat explained:

Before it was going to rain they would burn the hill behind Moricetown, down to Dowdie. The old people knew when it was going to rain. They *hear* it. Not for shower. Maybe 2 days in advance. My uncle knew. That's when they burn up the hill. The rain put the fire out. Burn up just one side. [They would burn for] all kinds of berries. (L.M. Johnson interview notes August 8, 1991)

Lowbush blueberry sites I had heard about were at low elevation, and were perhaps managed by spring burning. Those near Hazelton had been eliminated by the conversion of the landscape to farms and pastures, and by the cessation of management; several trips to the Upper Skeena above Euro-Canadian settlement in fall 2005 and 2006 revealed how rich the lowbush blueberry resource must have been on the wide low flats by the rivers.

Although I had learned about a number of formerly harvested and managed black huckleberry patches and a smaller number of areas in which lowbush blueberry had been harvested, and recorded peoples' recollections about their management by burning, I had done no "ground truthing". I had only once, years before I began to record information about traditional berry patches, walked through a traditional black huckleberry berry patch, and I had made only casual observations of the site, beyond the fact that berry bushes were sparse, and little fruit was in evidence. I had never attempted to climb the thickly forested mountain slopes or find remnants of old trails to see what those sites were like some fifty to eighty years after the cessation of active management. I had in fact never pondered what made a site suitable for berries in the first place, nor how one might recognize such a site.

Characterizing black huckleberry patch sites

After working with the hereditary Chiefs, the Strategic Watershed Analysis Team (a Gitksan resource management consulting group), and the Office of the Wet'suwet'en, Trusler had learned about a number of historically used black huckleberry patches in the Bulkley and Skeena River drainages. Trusler made site visits to several of these, and finally selected six areas for more detailed ecological and fire history analysis (Trusler 2002; Trusler and Johnson 2008). Three sites were in Witsuwit'en territory near Moricetown, and three sites were in Gitksan territory near Hazelton and Kispiox. Study site elevations ranged from valley bottom to timberline, and both slope and aspect were variable (Trusler and Johnson 2008, Table 1). In addition to slope and aspect, the current vegetation and soil characteristics, fire history, and cultural heritage features, of all six berry patches were described and compared (Trusler 2002). The diversity of these sites in terms of ecological parameters was striking. Some sites were substantially different from the "ideal" huckleberry site type that had been determined through autecological research on *Vaccinium membranaceum* (Burton 1998). Yet all had been important traditional black huckleberry sites. It became apparent that low-elevation sites such as Bek'et Digii Ts'ooyiin, a site in the Bulkley Valley near Moricetown, have cool north or east aspects, making them relatively moist and cool sites for their valley bottom location, while high-elevation sites such as Lax Ansa Matsa were found to have relatively warm aspects, giving them a longer growing season than other high-elevation sites. Selection of berry patch sites, then, appeared to be quite sophisticated, showing an understanding of what the huckleberry plants need to thrive, rather than using simple heuristics like aspect, slope position and elevation.

The six studied berry patches showed the following pattern: the two low-elevation sites had cool aspects, and had undergone succession to mature deciduous or coniferous growth. These sites ranged from about 400-600 m. The mid-elevation sites had predominantly warm aspects and ranged from about 600-1000 m, while high-elevation sites ranged from about 1000 m to 1300 m, and favoured warm aspects. Slopes tended to be steep on mid-elevation sites, and succession to dense coniferous growth or a mixture of coniferous and deciduous forest was typical. High-elevation sites were more rolling, and were characterized by an open scrub/conifer mosaic, commensurate with much shorter growing seasons and slower succession at higher elevations.

Other known berry patches

Although equally detailed information for other known berry patch sites in Gitksan and Witsuwit'en territories is lacking, the general range of characteristics seen in these six study sites seems to be consistent with the available information for other known historic berry patches. Several of these sites were surveyed by Trusler in a cursory manner as part of his initial field reconnaissance. Others were described in ethnographic interviews. High-elevation sites with warm aspects include Kslaawt, Anxsi 'Maa'y Litisxw, and Fiddler Creek. Grouse Mountain near Houston in the Bulkley Valley is a high-elevation rolling plateau site. En Tookw is a low-elevation site, and two other sites on Dinim Gyet's territory west of Gitwingak represent mid-elevation sites. Trusler found that two other low-elevation sites near Moricetown in the Bulkley Valley (Ooniin'aay and Decen Det'ekw)⁴ were very similar to Bek'it Digii Ts'ooyin.

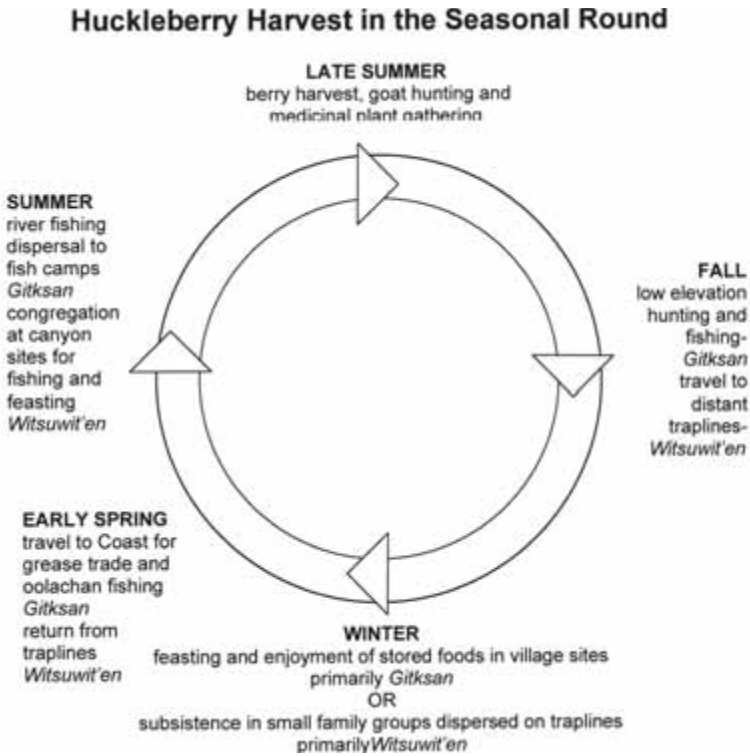


Figure 5.2 Seasonal round of the Gitksan and Witsuwit'en

In order to understand the criteria for selecting a berry patch site we need to think both of spatial aspects of berry harvest and seasonal timing. Some of the Elders' stories about berry patches situate their use in the context of the range of seasonal activities, and the places that these occur. The huckleberry harvest, as it occurs in mid to late summer, overlaps both summer salmon fishing and processing along the main rivers, and the late summer harvest of alpine resources, especially groundhogs and mountain goats. The grease trade with the people of the Coast occurred in late winter, between the winter feast season and the onset of summer fishing. The diagram in Figure 5.2 shows the Gitksan annual cycle with feasting in the winter, and the contrasting Witsuwit'en pattern with feasting in the summer when people came together to harvest the salmon at Moricetown or Hagwilget, a pattern similar to northern Athapaskans, who frequently gathered at fish lakes in the summer season. After the fishing and feast season, Witsuwit'en then dispersed to their winter hunting and trapping areas, which could be up to 200 km from the fishing sites at Hagwilget, known in Witsuwit'en as Tsë Cakh, 'under the rock', or Moricetown, which was traditionally called Kyah Wiget.⁵

In contrast, Gitksan fisheries are scattered at a number of locations along the Skeena mainstem and its tributaries that belong to different House groups. In the past, large log traps in canyons with rapid currents were combined with more upstream weirs and basket traps. Since the early twentieth century War of the Barricades (Galois 1993-1994; Daly 2005), the Gitksan have fished at a number of eddy sites with gillnets and at Kisgega'as with dipnets. The key difference is that the Gitksan summer fishery was dispersed, and people congregated again in the villages in the fall and winter.

Once the fish are caught, they must be processed immediately, because they spoil quickly in the warm weather of summer. In both Gitksan and Witsuwit'en ideology, waste of fish is a serious violation of respect, and will result in failure of future fish runs (Gottesfeld 1994c). Preserving this rich and temporally restricted harvest for winter is the major focus of the midsummer for both groups. Traditional fish processing is labour-intensive and the fish needs constant attention until it is fully dried and can be stored away.

Low- to mid-elevation huckleberry patches such as Bek'et Digii Ts'ooyiin, Decen Der'ekw, Oniin'ay and Sool Nii were sites that could be reached by a day's journey from Moricetown, to take advantage of the first berries while completing the harvesting and processing of the spring salmon and sockeye runs at Moricetown. Access to these sites would allow fresh berries to be served at Witsuwit'en summer potlatches. These sites were located within the Laksilyu territory of Utakghit.

Cultural contexts specific to berry patches

In this section I present information on the relationship of selected berry patches and other resource sites in greater detail. The first six sites were Trusler's ecological study sites (Trusler 2002).

Bek'et Degii Ts'ooyiin. The name means 'we pick huckleberry on it' (Dan Michell, pers. comm. 2005); "*degii*" [*digi*]⁶ is the Witsuwit'en word for black huckleberry (Johnson-Gottesfeld and Hargus 1998). This low-elevation site was historically one of the most important sites for the people of Moricetown/Kyah Wiget. It is accessible by road along the Bulkley Valley, and was located on an important historic trail linking Kyah Wiget with the Gitksan village of Gitsegukla. Two other significant lower-elevation huckleberry patches were also along this trail (Trusler 2002:74). Bek'et Degii Ts'ooyin was the first site within the local territory to have ripe fruit, owing to its low elevation. Apparently this site was used until about the 1960s, when forest succession depressed berry productivity.

Sool Nii (Reiseter Ridge). The Sool Nii site is located on a southwest facing slope along the Telkwa Highroad, which follows the route of a major regional trail along the East side of the Bulkley River. This berry patch is about 10 km south of Kyah Wiget, and shows a range of elevations and contemporary vegetation, ranging from areas presently dominated by aspen below 750 m, with seral pine on the upper slopes. The lower areas yielded primarily saskatoons (*Amelanchier alnifolia*) while the upper area was a productive huckleberry site. Ethnographic data indicates this whole area was a very important berry gathering area for the Witsuwit'en (Trusler 2002:82, 90), though usage declined after forced removal for the Wet'suwet'en from their historic winter village at Glentanna (Trusler 2002:96).

Harold Price. This site was discovered primarily by cultural evidence on site, as there is no ethnographic evidence of picking in the area for the past 90 years. The site is on a montane slope now largely dominated by western hemlock in the upper Harold Price Creek (Ses Kwe⁷) drainage. On the slope in the successional hemlock stand evidence of an abandoned berry camp was found, including the remnants of berry racks stacked against a tree, and sighting of another camp was reported in the 1980s that had cedar bentwood berry boxes and assembled berry racks (Trusler 2002:110). The Harold Price

(Ses Kwe) site is located among a number of other culturally significant sites, including a coho salmon fishing site 8 km upstream, a winter camp, and a winter whitefish site, and is adjacent to a clearly marked trail near the south end of the berry area. A winter village was also reported approximately 15 km from the coho fishing site. Although no oral histories of recent use have been recorded, archaeological and ecological evidence, together with proximity to a major historic trail route linking Babine Lake with the Skeena River system, suggest a formerly quite important site. Scars indicating collection of hemlock cambium, another important traditional carbohydrate food (Gottesfeld 1995; People of Ksan 1980), also indicate heavy use of the area approximately 100 years ago (Trusler 2002:111).

Stakaiyt and Lax̣ Ansa Maatsa. These sites are found on the territories of Gutginuxw (*Delgamuukw vs. the Queen*, exhibit 609) and are across the Skeena River from the Gitksan village of Kispiox, near Pinenut Creek on Sidina (“Caribou”) Mountain. They are montane, relatively high-elevation sites with warm aspects (Stakaiyt sites) or are relatively flat-lying (Lax̣ Ansa Maatsa). They have been important berry patches for quite a long time. Traditional trails traverse the area that are connected to the major trail extending up the east bank of the Skeena River to Kisgega’as, a very important fishing site and settlement at the confluence of the Skeena and Babine Rivers. Numerous fishing sites are found along both sides of the Skeena River in this area (Johnson 1998). Extensive ethnographic and interview data (Trusler 2002; Gottesfeld 1994b) attest to historic use and management of the area. Berry camps and message trees are found along these trails near historic berry patches (Trusler 2002:128-129; Johnson personal observation, 1985). Evidence of collection of cedar bark, used in lashing berry racks and making mats and baskets, is also found in the area (Trusler 2002:130). Hunting grounds for mountain goat and, historically, woodland caribou (*Rangifer tarandus caribou*) are found in the alpine areas of the mountain above the berry sites. Other nearby berry sites and a major village site were also found slightly to the north of these sites (Sampson and Abel Brown, cited in Trusler 2002:139).

Other berry patches

Blue Lake (Stic’odinkhlh Bin). Blue Lake is a higher-elevation gathering area near Hazelton. This site is about a day’s travel from the other main Witsuwit’en village, Hagwilget (Tsë Cakh). Later in the season, higher-

elevation areas yielding a variety of resources could be reached by carefully constructed trails. Black huckleberries, mountain goats, fall medicines, and the rhizomes of spiny wood fern, another important carbohydrate food which could be stored for winter, were present in the Blue Lake area, and elders from Hagwilget have shared stories about harvesting trips in late summer to the Blue Lake area (The Hagwilget [Tse-Kya] People 1995; L.M. Johnson interview notes).

The late Maryann Austin (also known as Maryann Alec) said:

They used to go in the summertime, in the last of August to pick berries. Young people they hunt goats all around Blue Lakes, around the ridges. No creek flow out of the lake. I saw that when they walked across the valley from the berry camp to retrieve the goat that was shot.⁸ They kill goat. They throw it down. We skin it all. Pack all that meat up to camp. Five. Hang meat on stick over fire. Squeeze berries. Cook potatoes and rice. Invite a lot of people to eat. Serve first, eat after. That was four or five years ago now, I guess. We used to use pack horse to go up there. Two hours we get up there [from Hagwilget]. (L.M. Johnson interview notes February 6, 1990)

More recently, huckleberries have been harvested from a clear cut about halfway up the mountain along the access trail.

Dinim Gyet's territory. The Wilson Creek Wolf Clan (Lax̱ Gibuu) territory west of Kitwanga has a number of berry patches and other resource sites, as mentioned briefly above. Dinim Gyet (Art Mathews Jr.), a Gitksan Lax̱ Gibuu chief from Gitwingak, has explained the locations of some key resource sites on his territory (Johnson 2000), and his father and mother described management of berry patches by burning in this area (Johnson 1999). Figure 5.3 shows part of the mountain called Enjegwas. In the centre of the photo is a berry patch, Win Luu Mesxw, which is connected by trail to other sites, berry patches, and lower down, the fishing site at Wilson Creek on the Skeena River. Above it was a traditional groundhog (hoary marmot) site, and a territory boundary at Ensidelaks is marked, part of the social structure of resource harvesting and localities. Downslope beyond the lower left corner of the photo is the main fish camp for this territory, and other high-elevation resource sites such as a goat-hunting area were reached by another trail system from the fish camp at Wilson Creek. Wilson Creek is



Figure 5.3 A portion of Dinim Gyet's territory showing resource sites, trail location, and territory boundary near Wilson Creek, Xso Gwingoohl; note berry patch Win Luu Mesx in centre of photo, near a rock bluff

one of the highly productive fishing areas along the Skeena River. Dinim Gyet has a smokehouse and cabin there, and conducts commercial beach seining for sockeye in the fishing areas nearby. The smokehouse site is also the place where Art's father was born in 1913, showing the continuing relationships to territory maintained by marriage over the generations. As Gitksan are matrilineal and Clan exogamous, Art Senior was not Chief of the territory on which he was born; he was a Frog (Ganeda, Sim'oogit Tsii Wa)—his mother's crest, not a Wolf. As "father's side" (*wilksiwitxw*) he participated in burning one of the berry patches on his wife's territory when he was a young man. Tsii wa described this experience in 1990:

Just the berries, that's why they burned.

Where they are getting goats up on the mountain, close to where they get their meat [they burn]. Not on the flat. When they start to hunt in September, close to where they get the meat.

They told the Forestry, "There's no timber way up the mountain. We burn the bushes, that's all. Burn them and look after them."

When we left from our camp we didn't put the fire out. We left it. When we go up the mountain the fire is coming after us.

(L.M. Johnson interview notes December 11, 1990)

This brief description sets the season, emphasizes stewardship as the reason for burning, indicates responses to the interference of the Forestry officials, and shows the spatial and seasonal linkage to other resources on the mountain area described by Dinim Gyet several years later.

Shandilla area. About 10 km upstream of Wilson Creek in the immediate area of the village of Kitwanga, there are another series of trails and traditional berry patches in the area generally referred to as “Shandilla” (Xsa Andilgan⁹, ‘Beaver Dam Creek’). Gitksan land-use researcher Art Loring and the late Ray Morgan helped to mark trail and berry patch locations on the 1:50,000 topographic maps (Figure 5.4). Narrative accounts of berry harvesting in the Shandilla area were recorded from the late Olive Ryan and Gertie Watson (L.M. Johnson field notes). Management by burning was also described for these sites, along with post-management forest succession. Although at relatively high elevation, these sites were harvested in the mid twentieth century by overnight trips from Kitwanga, and the fruit brought back to the village for processing. This allowed access to berries while fishing occurred at sites along the Skeena mainstem near the village. It is likely that these trails also

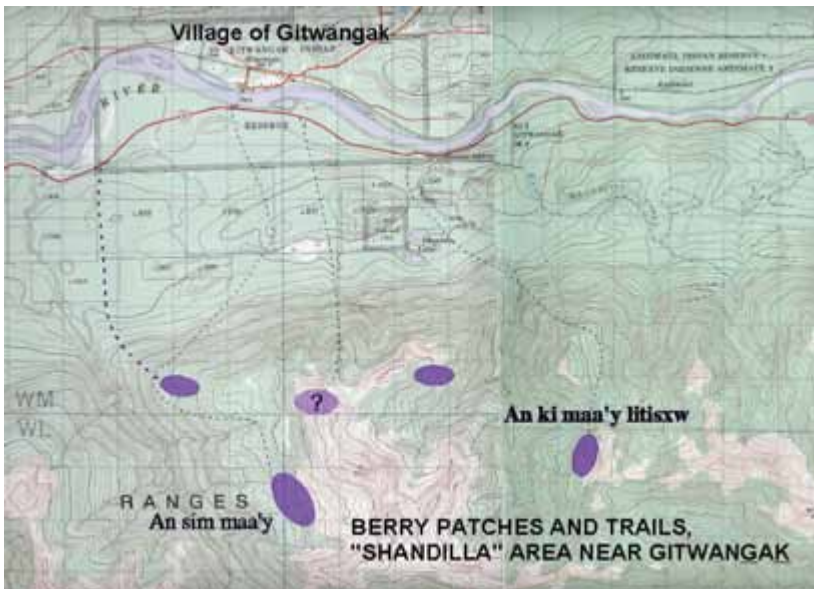


Figure 5.4 Map of Shandilla area

access various alpine resources such as mountain goat, and perhaps in the past woodland caribou. Two sites were named An Sim Ma'ay ("Real Huckleberry on It," an#sim#/m'aay 'on it'# 'true or real'# 'berry') and An Ki Ma'ay Litisxw ("Blue Grouse's Berry on It"). Comparison of photographs taken in ca. 1899 and in 2001 (Figures 5.5a and b) reveals the extensive forest succession on the slopes of the Shandilla area. Olive alluded to forest succession when I asked about the sites. "Big tree now," she told me in the mid 1990s. Her son James had gone up to see the site at An Ki Maa'y Litisxw and found mature forest.

It is likely that maintenance of productive early-successional sites at high elevation through burning may have affected other resources than the berries. Perhaps grouse abundance was increased by greater fruit production, for example. "Blue Grouse's Berry on It" may commemorate this relationship. Mountain goats too may respond to the browse offered by huckleberry bushes, creating a sort of synergy between different resources that may all be enhanced by human management, and accessed from the same trails. Narratives by elders talk about mixed trips, where men may go goat hunting and/or burn the berry patch, while women may be picking at a higher-elevation productive berry patch. (L.M. Johnson field notes).

Kslaawt. This is the large berry patch area accessed from the missionary village of Andimaul in the early years of this century. Kslaawt ("Underneath") belonged to Sigidimnaḵ Ha'namuux. As the late Olive Ryan described, the area was used by many people, and the berry picking lasted several weeks. A fuller account of berry picking on this site is given in Johnson 1997. The site was apparently a relatively high-elevation site up Juniper Creek in the Rocher de Boule massif. The area would also have offered medicinal plants and mountain goats.

Succession on berry patches

Trusler's fieldwork revealed what had happened to the formerly productive berry sites in the seventy-odd years since cessation of active management. Low-elevation sites such as Bek'et Digii Ts'ooyiin and Decen Det'ekw have succeeded to deciduous woodland or conifer (pine) stands which have little remaining *Vaccinium* cover, and no fruit production. The area of Bek'et Digii Ts'ooyiin was apparently last used for huckleberry picking in the 1950s (Sam Wilson of Moricetown, pers. comm. to Trusler). The name Decen Det'ekw ('burnt stick') recalls the importance of berry patch burning.



Figure 5.5a Comparison of ca. 1899 and 2001 photos of Shandilla area from Gitwingak; view of Shandilla area, circa 1899 Image number PN12106, Royal British Columbia Museum.



Figure 5.5b View of Shandilla area, 2001 Note complete forest cover below timberline on slopes of higher mountain in the recent photo.

On the Harold Price/upper Ses Kwe site, the mid-elevation area has succeeded to a dense productive western hemlock forest. Remnant huckleberry on the site is diminutive, and does not flower or fruit. Although now completely forested, Trusler found that there was no evidence of a pre-existing forest stand, such as down logs or snags, to corroborate its former open state. A dense productive conifer stand has also developed at the mid-elevation portion of the Stakaiyt site. This is probably the situation for An Ki Maa'y Litisxw near Gitwingak as well, judging from Olive Ryan's description.

In general, high-elevation sites have largely remained more open, forming a conifer-shrub mosaic. In the absence of burning, fire-tolerant *Vaccinium membranaceum* is being overtopped by more fire-sensitive species such as fool's huckleberry (*Menziesia ferruginea*, an Ericaceous shrub that does not produce berries), and sometimes highbush blueberry (*Vaccinium ovalifolium*), whose more watery and acidic fruits are not preferred by Gitksan and Witsuwet'en berry pickers. The upper portion of Stakaiyt on Caribou Mountain, Lax Ansa Maatsa, and sites at Grouse Mountain and Fiddler Creek exemplify this successional pathway. The slower pace of succession and conifer establishment, and the shorter growing season on the upper montane and subalpine slopes result in persistent open-structured plant communities where *V. membranaceum* can persist but loses productivity over time.

Because it is rhizomatous, *Vaccinium membranaceum* can persist for decades under low light conditions. However, such clones may be so weakened by the time the canopy is removed that they are not competitive with early seral herbs and scrub vegetation, and the huckleberry patch may not regenerate. Plants growing in higher light conditions grow vigorously, though they do not always fruit productively. They do survive light burning well, producing vigorous sprouts from the rhizomes when the above-ground stems are killed (Minore 1972).

Ethnoecology

There is linguistic evidence for the significance of berry patch ecology and management in local ethnoecology. The only term recorded denoting ecological succession that I recorded from Gitksan speakers in my landscape research was the term *maaxsgan*, which was translated for me as "too much brush on the berry patch". This suggests that tracking successional status on berry patches and responding to brushiness were important. The berry patch itself is called *ansimaa'y* in Gitxsanimax. In Wet'suwet'en, the berry patch is *nit'ay k'et*. No Witsuwit'en language term for 'brush on the berry patch' has

yet been recorded, though I have recorded terms for “a brushy place you can't walk through, jungle” and for “a burned place” (Johnson and Hargus 2007; this text, Chapter 4).

The broad issue of how berry patches or potential berry patches are conceived of, or recognized as, kinds of place or ecotopes is an important ethnoecological question. I have sought to elucidate Gitksan and Witsuwit'en knowledge of environment and habitat through linguistic research focusing on place kind terminology (Johnson 1997, 2000; this text, Chapters 3 and 4) following on earlier work by Eugene Hunn (Hunn with James Selam and family 1990; Hunn and Meilleur 1992, 1998). Examining the influence of the biophysical environment itself (if we concede this to be separable from human societies) and the nature of the economy and social system of different cultural groups on their characterization of their environment, sheds light on the diverse ways human beings conceive of their lived worlds. Such understandings have implications for considering the relationships of local human groups to their homelands, and the co-management of resources in these areas, an important contemporary issue in many parts of the world.

This extended examination of one Gitksan and Witsuwit'en ecotope—the berry patch—demonstrates that not all ecotopes can be characterized solely by biophysical characteristics; some kinds, such as berry patches, also require consideration of human geography and culture. Proximity to village sites, fishing sites and/or alpine resources, and major trails or other access routes are all involved in the selection of sites for management as berry patches. It is also impossible to consider traditional berry patches without acknowledging the traditional social and political structure—the House/Clan territory system—as the context for use and management of berry patches.

The fact that a wide array of sites potentially support black huckleberry, while only some of these will in fact receive human management, is reminiscent of the kinds of decisions other indigenous groups make about manipulating vegetation or promoting growth of specific species for human use. In this it is similar to the approach to vegetation management described by Alcorn (1981), where she found that the type of manipulation of species by Huastec farmers depended on the context in which the species occurred, its usefulness and other potential sources of the same species or resource.

Another aspect of managing diverse sites for black huckleberry may be related to minimizing risk. If late frost destroys the flowers of a high-elevation patch, for example, possibly the fruit will still be good in a warmer lower elevation site. Or in a year of prolonged summer drought, possibly the cool,

moist high-elevation sites will still be productive even if low-elevation sites fail to fruit. Gitksan and Witsuwit'en use of a range of sites that have differing responses to climatic variation buffers climate and weather events, and serves as a resilience mechanism (cf. Colding et al. 2003).

“Berry patch” is a concept that is easily recognized in the ethnoecology of other northwestern indigenous peoples. (See Thornton 1999, 2007; Deur and Turner 2005 and authors therein, among others.) McDonald (2005:245-246) presents intriguing evidence for management of montane berry resources, including *V. membranaceum* and other *Vaccinium* species by the Kitsumkalum people, an interior Tsimshian group just west of the Gitksan on the lower Skeena River. The significance of constructed infrastructure in facilitating access and management of these sought-after high-elevation berries is particularly highlighted in McDonald's account, as are the consequences of disruptions to access and maintenance activities. Black huckleberry patches were maintained by burning and by rotation of use areas in other parts of its range, in ways that seem very similar to the way that Gitksan and Witsuwit'en historically managed their berry patches (N. Turner 1999; Gottesfeld 1994b; Ross 1999). In particular, the description of early twentieth-century burning of high-elevation berry grounds in the Gifford Pinchot National Forest in southern Washington state (Mack 2001; Mack and McClure 2002), and the ethnographic data on the use and management of high-elevation berry sites by Sto:lo (Lepofsky et al. 2005) are very similar to what Trusler and I have reconstructed for the Gitksan and Witsuwit'en (Trusler and Johnson 2008). Nancy Turner (1999) has also documented widespread management of black huckleberry by burning in British Columbia. In some ways, the concept of the “berry patch” ecotope has resonances with orchards and root gardens, as ecological types defined and managed by people, integrated into their economies, and produced or maintained by their agency.

Another aspect of berry patches that bears consideration is their status as owned properties. Richardson (1982) discussed the relationship of various resources in the northern Northwest Coast area, which by extension reaches up the rivers into Gitksan and Witsuwit'en territories. Richardson contends, following earlier discussion of Dyson-Hudson and Smith in 1978, that

A territorial system is most likely under conditions of high density and predictability of critical resources . . . If a resource is so abundant that its availability or rate of capture is not in any way limiting

to a population, then there is no benefit to be gained by its defence and territoriality is not expected to occur. (Dyson-Hudson and Smith 1978:25)

Richardson comments that where resources are very widely distributed and abundant, they are unlikely to be subjected to access limitations. However, resources that are spatially and temporally limited may be worth controlling access, and enhancing through management.¹⁰ He writes:

The resources most frequently subject to access restrictions on the Northwest Coast were predictable and abundant, but also *geographically restricted* to limited areas or *patches*. This third variable of resource patchiness was not explicitly included in the economic defensibility model, but seems essential to explaining resource control patterns on the Northwest Coast. (Richardson 1982:95, emphasis added)

Later in the same article he writes:

The geographical and *temporal* restrictions of resources put a premium on management of both resources and labor. In this situation the tightly organized unilineal kinship groups should perhaps be expected . . . The factor of patchiness would also be important in an analysis of resource exploitation emphasizing organization of labor and change in seasonal settlement. (Richardson 1982:108, emphasis added)

While I find the optimal foraging language and deterministic analysis a bit uncomfortable, the realities of resource distribution and the need for mobilization of social resources to enable their effective use are clear. In a social and economic perspective, then, ownership of berry patches, and regulation of the timing and frequency of harvest and management activities, is an effective strategy to conserve these resources and contribute to the stability of the economy of House groups. Similar types of resource patch ownership and management is reported by authors in Deur and Turner 2005 for a range of resources—root patches, berry patches, crabapple trees—and ownership and access limitation for shellfish resources is also reported (Moss 1993).¹¹

In conclusion, one cannot characterize traditional berry patches in the Hazelton area solely in terms of biophysical characteristics. In Northwest BC, the ecological amplitude of *Vaccinium membranaceum* is wide, but it is not persistent as a productive vegetation type in the absence of a fire regime with a relatively short return interval, which here can only be produced by human management. The human management regime helps to create convergent ecological characteristics in diverse sites to create optimal conditions for black huckleberry growth. Maintenance of (relative) predictability in quality and quantity of resource was important for the viability of the aboriginal economy, as black huckleberry harvest was a major focus of the traditional harvesting cycle. A key characteristic of the known managed Gitksan and Witsuwit'en berry patches Trusler and I have examined is their proximity to village sites, fishing sites, and significant access trails to the alpine zone. The siting of berry patches, therefore, reflects human geography, spatial, seasonal and social patterning of movement and resource harvest, and the effort of human managers from the appropriate social groups to look after and maintain their berry patches.

The ecological characterization of traditional berry patch localities revealed a wide range of site characteristics such as elevation and aspect, and post-management successional pathways. The actual siting of the berry patches appears to be strongly related to the traditional seasonal round—berry patches were areas that could fit into the annual cycle of harvesting activities. As I have discussed, the Gitksan and Witsuwit'en are both groups with a highly developed territory system that shapes access to land areas according to Clan and House groupings within the community, which requires that each House or Clan group have a reasonable range of resource areas for the most important resources such as salmon and huckleberries.